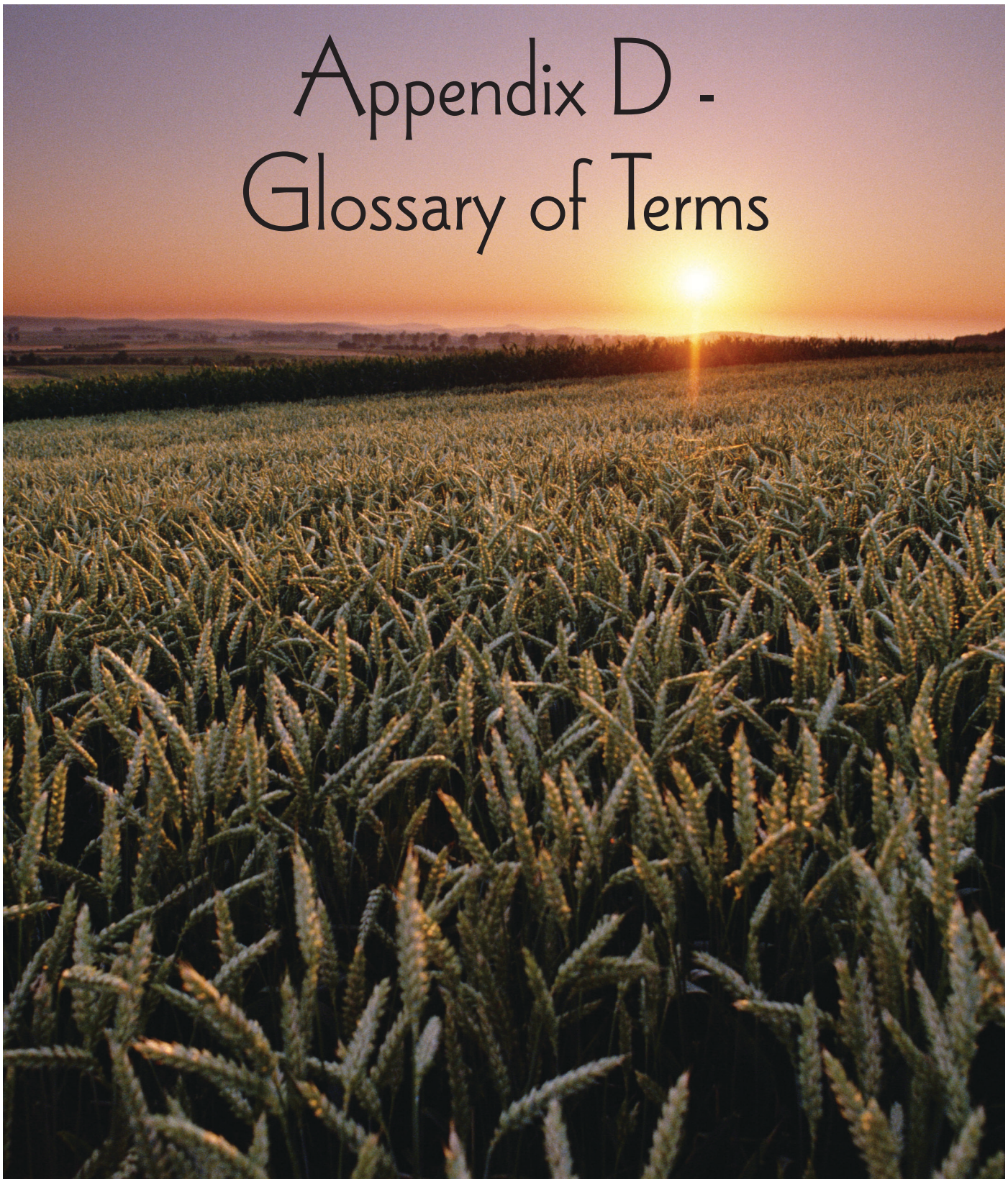
Appendix D - Glossary of Terms



A complete glossary reference list can be found in EPA's Report on the Environment Technical Document, Appendix E.

A

acid deposition: A complex chemical and atmospheric phenomenon that occurs when emissions of sulfur and nitrogen compounds are transformed by chemical processes in the atmosphere and then deposited on earth in either wet or dry form. The wet forms, often called "acid rain," can fall to earth as rain, snow, or fog. The dry forms are acidic gases or particulate matter.

advisory: A nonregulatory document that communicates risk information to those who may have to make risk management decisions.

aerosol: 1. Small droplets or particles suspended in the atmosphere, typically containing sulfur. They are emitted naturally (e.g., in volcanic eruptions) and as a result of human activities such as burning fossil fuels. 2. The pressurized gas used to propel substances out of a container.

agricultural waste: Byproducts generated by the rearing of animals and the production and harvest of crops or trees. Animal waste, a large component of agricultural waste, includes waste (e.g., feed waste, bedding and litter, and feedlot and paddock runoff) from livestock, dairy, and other animal-related agricultural and farming practices.

air pollutant: Any substance in air that could, in high enough concentration, harm man, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of matter capable of being airborne. It may be in the form of solid particles, liquid droplets, gases, or a combination thereof. Generally, they fall into two main groups: (1) those emitted directly from identifiable sources and (2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog, and dust, which are of natural origin, about 100 contaminants have been identified. Air pollutants are often grouped in categories for ease in classification; some of he categories are: solids, sulfur compounds, volatile organic chemicals, particulate matter, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compound, and odors.

air pollution: The presence of contaminants or pollutant substances in the air that interfere with human health or welfare or produce other harmful environmental effects.

air quality criteria: The levels of pollution and lengths of exposure above which harmful health and welfare effects may occur.

air quality standards: The level of pollutants prescribed by regulations that are not to be exceeded during a given time in a defined area.

air toxics: Air pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. Examples of toxic air pollutants include benzene, found in gasoline; perchloroethylene, emitted from some dry cleaning facilities; and methylene chloride, used as a solvent by a number of industries.

algal blooms: Sudden spurts of algal growth, which can degrade water quality and indicate potentially hazardous changes in local water chemistry.

ambient air: Any unconfined portion of the atmosphere; open air, surrounding air.

ambient air quality standards: See criteria pollutants and National Ambient Air Quality Standards.

anthropogenic: Originating from humans, not naturally occurring.

aquatic ecosystems: Salt water or fresh water ecosystems, includes rivers, streams, lakes, wetlands, estuaries, and coral reefs.

aquifer: An underground geological formation, or group of formations, containing water; source of ground water for wells and springs.

arsenic: A silvery, nonmetallic element that occurs naturally in rocks, soil, water, air, and plants and animals. It can be released into the environment through natural activities such as volcanic action, erosion of rocks, and forest fires or through human actions. Approximately 90 percent of industrial arsenic in the U.S. is used as a wood preservative, but arsenic is also used in paints, dyes, metals, drugs, soaps, and semiconductors. Agricultural applications (used in rodent poisons and some herbicides), mining, and smelting also contribute to arsenic releases in the environment. It is a known human carcinogen.

asbestos: Naturally occurring strong, flexible fibers that can be separated into thin threads and woven. These fibers resist heat and chemicals and do not conduct electricity. Asbestos is used for insulation, making automobile brake and clutch parts, and many other products. These fibers break easily and form a dust composed of tiny particles that are light and sticky. When inhaled or swallowed they can cause health problems.

assemblage: The association of interacting populations of organisms in a selected habitat.

B

beach day: A day that a beach would normally be open to the public.

benthic: Occurring at or near the bottom of a body of water.

benthic organisms: The worms, clams, crustaceans, and other organisms that live at the bottom of the estuaries and the sea.

benthos: In fresh water and marine ecosystems, organisms attached to, resting on, or burrowed into bottom sediments.

bioaccumulation: A process whereby chemicals (e.g., DDTs, PCBs) are retained by plants and animals and increase in concentration over time. Uptake can occur through feeding or direct absorption from water or sediments.

biodiversity: The variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequencies. The term encompasses three basic levels of biodiversity: ecosystems, species, and genes.

biological diversity: See *biodiversity.*

biomass: All of the living material in a given area; often refers to vegetation.

biomonitoring: The assessment of human exposure to chemicals by measuring the chemicals or their metabolites (breakdown products) in human tissues or fluids such as blood or urine. Blood and urine levels reflect the amount of the chemical in the environment that actually gets into the body.

biotic: Refers to living organisms.

biotic condition: The state of living things.

biotic integrity: The ability to support and maintain balanced, integrated functionality in the natural habitat of a given region.

body burden: The amount of various contaminants retained in a person's tissues.

brownfield: Real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

C

cadmium: A metal found in natural deposits as ores containing other elements. The greatest use of cadmium is primarily for metal plating and coating operations, including transportation equipment, machinery and baking enamels, photography, and television phosphors. It is also used in nickelcadmium and solar batteries and in pigments.

carcinogen: An agent that causes cancer.

chained dollars: A measure used to adjust for the effects of inflation in the U.S. currency from year to year, such that a consistent monetary value can be understood over time. A chained dollar is based on the average weights of the cost of goods and services in successive pairs of years. It is "chained" because the second year in each pair, with its weights, becomes the first year of the next pair.

chlorine: A greenish-yellow gas that is slightly soluble in water. Chlorine is often used in disinfection of water and treatment of sewage effluent as well as in the manufacture of products such as antifreeze, rubber, and cleaning agents.

chromium: A heavy metal that occurs naturally in rocks, plants, soil, and volcanic dust and gases. It is tasteless and odorless. It can damage living things at low concentrations and tends to accumulate in the food chain.

cleanup: Action taken to deal with a release or threat of release of a hazardous substance that could affect humans, the environment, or both. The term "cleanup" is sometimes used interchangeably with the terms "remedial action," "removal action," "response action," or "corrective action."

coastal and ocean ecosystem: An ecosystem that consists primarily of estuaries and ocean waters under a country's jurisdiction. U.S. waters extend to the boundaries of the U.S. Exclusive Economic Zone, 200 miles from the U.S. coast.

coastal wetland: Ecosystem found along the coasts and closely linked to the nation's estuaries, where sea water mixes with fresh water to form an environment of varying salinities. The plants in coastal wetlands have adapted to fluctuating water levels and salinities to create tidal salt marshes, mangrove swamps, and tidal fresh water wetlands, which form beyond the upper edges of tidal salt marshes where the influence of salt water ends. Fresh water coastal wetlands can also be found adjacent to the Great Lakes.

community water system: A public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

construction and demolition debris: Waste generated during building, renovation, and wrecking projects. This type of waste generally consists of materials such as wood, concrete, steel, brick, and gypsum.

contaminant: Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil.

contaminated land: Ground that has been polluted with hazardous materials and requires cleanup or remediation. Contaminated sites may contain both polluted objects (e.g., buildings, machinery) and land (e.g., soil, sediments, and plants).

contaminated media: Materials such as soil, sediment, water, and sludge that are polluted at levels requiring cleanup or further assessment.

contamination: Introduction into water, air, or soil of microorganisms, chemicals, toxic substances, wastes, or waste

water in a concentration that makes the medium unfit for its next intended use. Also applies to surfaces of objects, buildings, and various household and agricultural use products.

conterminous: Enclosed within one common boundary (e.g., the 48 conterminous states).

cotinine: A breakdown product (metabolite) of nicotine that can be measured in urine.

criteria air pollutants: A group of six widespread and common air pollutants regulated by the EPA on the basis of standards set to protect public health or the environment. These six criteria pollutants are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

cropland: A National Resources Inventory land cover/use category that includes areas used for the production of adapted crops for harvest. Two subcategories of cropland are recognized: cultivated and noncultivated. Cultivated cropland comprises land in row crops or close-grown crops and also other cultivated cropland, for example, hayland or pasture-land that is in a rotation with row or close-grown crops. Noncultivated cropland includes permanent hayland and horticultural cropland.

D

designated uses: Those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act. Uses can include fishing, shellfish harvesting, public water supply, swimming, boating, and irrigation.

developed land: A combination of National Resource Inventory land cover/use categories: large urban and built-up areas, small built-up areas, and rural transportation land.

dioxin: A group of chemically similar compounds, known chemically as dibenzo-p-dioxins, that are created inadvertently during combustion, chlorine bleaching of pulp and paper, and some types of chemical manufacturing. Tests on laboratory animals indicate that it is one of the more toxic anthropogenic (manmade) compounds.

disinfection by-product: A compound formed by the reaction of a disinfectant such as chlorine with organic material in the water supply; a chemical byproduct of the disinfection process.

dry deposition: The settling of gases and particles out of the atmosphere. Dry deposition is a type of acid deposition, more commonly referred to as "acid rain."

E

ecological indicators: Measurable characteristics related to the structure, composition, or functioning of ecological systems; a measure, an index of measures, or a model that characterizes an ecosystem or one of its critical components; any expression of the environment that quantitatively estimates the condition of ecological resources, the magnitude of stress, the exposure of biological components to stress, or the amount of change in condition.

ecological processes: The metabolic functions of ecosystems—energy flow, elemental cycling, and the production, consumption, and decomposition of organic matter.

ecosystem: 1. The interacting system of a biological community and its nonliving environmental surroundings. 2. A geographic area including all living organisms (people, plants, animals, and microorganisms), their physical surroundings (such as soil, water and air), and the natural cycles that sustain them.

emissions standard: The maximum amount of air-polluting discharge legally allowed from a single source, mobile or stationary.

endangered species: Animals, birds, fish, plants, or other living organisms threatened with extinction by anthropogenic (human-caused) or natural changes in their environment. Requirements for declaring a species "endangered" are contained in the Endangered Species Act.

enrichment: The addition of nutrients (e.g., nitrogen, phosphorus, carbon compounds) from sewage effluent, agricultural or urban runoff, or other sources to surface water. Enrichment greatly increases the growth potential for algae and other aquatic plants.

environmental indicators: Scientific measurements that track help measure over time the state of air, water, and land resources, pressures on those resources, and resulting effects on ecological condition and human health. Indicators show progress in making the air cleaner and the water purer and in protecting land.

environmental tobacco smoke (ETS): A mixure of smoke exhaled by a smoker and the smoke from the burning end of a smoker's cigarette, pipe, or cigar. Also known as secondhand smoke.

erosion: The wearing away of land surface by wind or water, intensified by land-clearing practices related to farming, residential or industrial development, road building, or logging.

estuaries: Partially enclosed bodies of water (this term includes bays, sounds, lagoons, and fjords); they are generally considered to begin at the upper end of tidal or saltwater influence and end where they meet the ocean.

eutrophic: Pertaining to a lake or other body of water characterized by large nutrient concentrations, resulting in high productivity of algae.

eutrophication: The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of this process, the water body is choked by abundant plant life that result from higher levels of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.

extraction waste: Byproducts produced as a result of mining practices.

F

farmlands: Include both croplands lands used for production of annual and perennial crops and livestock and on the surrounding landscape, which includes field borders and windbreaks, small woodlots, grassland or shrubland areas, wetlands, farmsteads, small villages and other built-up areas, and similar areas within and adjacent to croplands.

fertilizers: Supplements to improve plant growth that are commonly used on agricultural lands, as well as in urban, industrial, and residential settings.

fish kill: A large-scale die-off of fish caused by factors such as pollution, noxious algae, harmful bacteria, and hypoxic conditions.

flora: Plant or bacterial life.

forage: Food for animals especially when taken by browsing or grazing.

forests: Lands at least 10 percent covered by trees of any size, at least one acre in extent. This includes areas in which trees are intermingled with other cover, such as chaparral and pinyon, juniper areas in the Southwest, and both naturally regenerating forests and areas planted for future harvest (plantations or tree farms).

forest land: Land that is at least 10 percent stocked by forest trees of any size, including land that formerly had tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is one acre.

fresh water systems: Include:

- Rivers and streams, including those that flow only part of the year
- Lakes, ponds, and reservoirs, from small farm ponds to the Great Lakes
- Ground water, which is often directly connected to rivers, streams, lakes, and wetlands
- Fresh water wetlands, including forested, shrub, and emergent wetlands (marshes), and open water ponds
- Riparian areas—the usually vegetated margins of streams and rivers (although this term can also apply to lake margins).

G

grasslands and shrublands: Lands in which the dominant vegetation is grasses and other nonwoody vegetation, or where shrubs (with or without scattered trees) are the norm (also called rangelands); includes bare-rock deserts, alpine meadows, arctic tundra, pastures, and haylands (an overlap with the farmland system). Less-managed pastures and haylands fit well within the grassland/shrubland system; more heavily managed ones fit well as part of the farmlands system.

groundlevel ozone: See *ozone.*

ground water: Subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.

H

habitat: The place where a population (e.g., human, animal, plant, microorganism) lives and its surroundings, both living and nonliving.

hazardous waste: Byproducts of society that can pose a substantial or potential threat to human health or the environment when improperly managed. Hazardous waste possesses at least one of four characteristics: ignitability, corrosivity, reactivity, or toxicity.

health outcomes: An outcome measured by the quality of life, likelihood of disease, life expectancy and overall health of individuals or communities.

heavy metals: Metallic elements with high atomic weights (e.g., mercury, chromium, cadmium, arsenic, lead); can damage living things at low concentrations and tend to accumulate in the food chain.

herbicide: A form of pesticide used to control weeds that limit or inhibit the growth of the desired crop.

high-level radioactive waste: Highly radioactive material produced as a byproduct of the reactions that occur inside nuclear reactors. High-level waste takes one of two forms: spent (used) reactor fuel; waste materials remaining after spent fuel is reprocessed.

household hazardous waste: Hazardous products used and disposed of by residential rather than industrial consumers. It includes paints, stains, varnishes, solvents, pesticides, and other materials or products containing volatile chemicals that can catch fire, react, or explode, or are corrosive or toxic.

hydrologic cycle: Movement or exchange of water between the atmosphere and earth.

hypoxia/hypoxic waters: Waters with low levels of dissolved oxygen concentrations, typically less than two ppm, the level generally accepted as the minimum required for most marine life to survive and reproduce.

I

impervious surface: A hard surface area that either prevents or retards the entry of water into the soil mantle or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads.

incidence rate of disease: The number of new cases of a disease or condition in a given period of time in a specified population.

indoor air: The breathable air inside a habitable structure or conveyance.

indoor air pollution: Chemical, physical, or biological contaminants in indoor air.

industrial waste: Process waste associated with manufacturing. This waste usually is not classified as either municipal waste or hazardous waste by federal or state laws.

industrial non-hazardous waste: Process waste associated with generation of electric power and manufacture of materials such as pulp and paper, iron and steel, glass, and concrete. This waste usually is not classified as either municipal waste or hazardous waste by federal or state laws.

infant mortality: The death of children in the first year of life.

invasive species: See *nonnative species.*

K-L

land cover: The ecological status and physical structure of the vegetation on the land surface.

land use: Describes how a piece of land is managed or used by humans. The degree to which the land reflects human activities (e.g., residential and industrial development, roads, mining, timber harvesting, agriculture, grazing, etc.).

landfills: 1. Sanitary landfills: Disposal sites for nonhazardous solid wastes spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day. 2. Secure chemical landfills: Disposal sites for hazardous waste, selected and designed to minimize the chance of release of hazardous substances into the environment.

landscape: The traits, patterns, and structure of a specific geographic area, including its biological composition, its physical environment, and its anthropogenic or social patterns. An area where interacting ecosystems are grouped and repeated in similar form.

landscape condition: The extent, composition, and pattern of habitats in a landscape.

large urban built-up areas: A National Resources Inventory land cover/use category composed of developed tracts of at least 10 acres, meeting the definition of urban and built-up areas.

leaching: The process by which soluble materials in the soil, such as nutrients, pesticide chemicals, or contaminants, are washed into a lower layer of soil or are dissolved and carried away by water.

lead: A heavy metal used in many materials and products. It is a natural element and does not break down in the environ-

ment. When absorbed into the body, it can be highly toxic to many organs and systems.

levee: A natural or manmade earthen barrier along the edge of a stream, lake, or river. Land alongside rivers can be protected from flooding by levees.

lichen: Any of numerous complex thallophytic plants made up of an alga and a fungus growing in symbiotic association on a solid surface (e.g., a rock).

life expectancy: The probable number of years (or other time period) that members of a particular age class of a population are expected to live, based on statistical studies of similar populations in similar environments.

life expectancy (at birth): The average number of years that a group or cohort of infants born in the same year are expected to live.

low birth weight: Refers to children born weighing less than 2,500 grams (5.5 pounds).

low-level waste: Radioactive waste, including accelerator produced waste, that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, byproduct material (as defined in the Atomic Energy Act of 1954), or naturally occurring radioactive material.

M

media: Specific environments—air, water, soil—that are the subject of regulatory concern and activities.

medical waste: Any solid waste generated during the diagnosis, treatment, or immunization of human beings or animals, in research, production, or testing.

mercury: A metallic element that occurs in many forms and in combination with other elements. When combined with carbon, which readily occurs in water, it forms more bioavailable organic mercury compounds (e.g., methylmercury).

metabolites: Compounds that result from human digestion (metabolism) of contaminants and that serve as a biomarkers of exposure.

microorganisms: Tiny life forms that can be seen only with the aid of a microscope. Some microorganisms can cause acute health problems when consumed; also known as microbes.

mobile sources: Moving objects that release pollution from combustion of fossil fuels, such as cars, trucks, buses, planes, trains, lawn mowers, construction equipment, and snowmobiles. Some mobile sources, such as some construction equipment or movable diesel generators, are called nonroad sources, because they are usually operated off road.

morbidity: Sickness, illness, or disease that does not result in death.

mortality: Death rate.

mortality rate: The proportion of the population who die of a disease, often expressed as a number per 100,000.

municipal solid waste: Waste discarded by households, hotels/motels, and commercial, institutional, and industrial sources. It typically consists of everyday items such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. It does not include waste water.

N

National Ambient Air Quality Standards: Standards established by EPA under the Clean Air Act that apply to outdoor air throughout the country. See *criteria pollutants*.

nitrate: The primary chemical form of nitrogen in most aquatic systems; occurs naturally; a plant nutrient and fertilizer; can be harmful to humans and animals.

nitric oxide (NO): A gas formed by combustion under high temperature and high pressure in an internal combustion engine; it is converted by sunlight and photochemical processes in ambient air to nitrogen oxide. NO is a precursor of ground level ozone pollution, or smog.

nitrogen dioxide (NO_2): The result of nitric oxide combining with oxygen in the atmosphere; major component of photochemical smog.

nitrogen oxides (NO_X): The result of photochemical reactions of nitric oxide in ambient air; major component of photochemical smog. Product of combustion from transportation and stationary sources and a major contributor to the formation of ozone in the troposphere and to acid deposition.

non-community water system: A public water system that is not a community water system. Nontransient noncommunity water systems are those that regularly supply water to at least 25 of the same people at least six months per year but not year-round (e.g., schools, factories, office buildings, and hospitals that have their own water systems). Transient noncommunity water systems provide water in a place where people do not remain for long periods of time (e.g., a gas station or campground).

non-hazardous waste: See *solid waste.*

non-isolated intermediaries: An intermediate compound in a chemical manufacturing process that can be a by-product or can be released as a result of the process.

nonnative species: A species that has been introduced by human action, either intentionally or by accident, into areas outside its natural geographical range. Other names for these species include alien, exotic, introduced, and nonindigenous.

nonpoint source pollution: Pollution that occurs when rainfall, snowmelt, or irrigation water runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, coastal waters, or ground water. Types of pollution include sediments, nutrients, pesticides, pathogens (bacteria and viruses), toxic chemicals and heavy metals that runoff from agricultural land, urban development, and roads.

nutrient: Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus, but is also applied to other essential and trace elements.

nutrient enrichment: See *eutrophication.*

oil and gas production wastes: Drilling fluids, produced waters, and other wastes associated with the exploration, development, and production of crude oil or natural gas that are conditionally exempted from regulation as hazardous wastes.

organic matter: Plant and animal material that is in the process of decomposing. When it has fully decomposed, it is called "humus." This humus is important for soil structure because it holds individual mineral particles together in clusters.

organophosphate: Pesticides that contain phosphorus; shortlived, but some can be toxic when first applied.

ozone: A very reactive form of oxygen that is a bluish irritating gas of pungent odor. It is formed naturally in the atmosphere by a photochemical reaction and is a beneficial component of the upper atmosphere. It is also a major air pollutant in the lower atmosphere, where it can form by photochemical reactions when there are conditions of air pollutants, bright sunlight, and stagnant weather.

ozone depletion: Destruction of the stratospheric ozone layer, which shields earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain compounds that contain chlorine, bromine, or both (chlorofluorocarbons or halons), which occurs when they reach the stratosphere and then catalytically destroy ozone molecules.

ozone hole: A well-defined, large-scale area of significant thinning of the ozone layer. It occurs over Antarctica each spring.

ozone layer: The protective stratum in the atmosphere, about 15 miles above the ground, that absorbs some of the sun's ultraviolet rays, thereby reducing the amount of potentially harmful radiation that reaches earth's surface.

ozone precursors: Chemicals that contribute to the formation of ozone.

P

particulate matter: Solid particles or liquid droplets suspended or carried in the air (e.g., soot, dust, fumes, mist).

passive smoking: Exposure to tobacco smoke, or the chemicals in tobacco smoke, without actually smoking. It usually refers to a situation where a nonsmoker inhales smoke emitted into the environment by other people smoking. This smoke is known as "environmental tobacco smoke" (ETS).

pastureland: A National Resources Inventory land cover/use category of land managed primarily for the production of introduced forage plants for livestock grazing. Pastureland cover may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture. For the NRI, it includes land that has a vegetative cover of grasses, legumes, and/or forbs, regardless of whether or not it is being grazed by livestock.

pathogen: Microorganism (e.g., bacteria, viruses, or parasites) that can cause disease in humans, animals, and plants.

persistent organic pollutants: Chemicals that endure in the environment and bioaccumulate as they move up trough the food chain. They include organochlorine pesticides, polychlorinated biphenyls (PCBs), dioxins, and furans.

pesticides: Any substance or mixture of substances intended to prevent, destroy, repel, or mitigate any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms such as bacteria and viruses. Though often misunderstood to refer only to insecticides, the term "pesticide" also applies to herbicides, fungicides, and various other substances used to control pests. Under U.S. law, a pesticide is also any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

phosphorus: An essential chemical food element that can contribute to the eutrophication of lakes and other water bodies. Increased phosphorus levels result from discharge of phosphorus containing materials into surface waters.

photosynthesis: The manufacture by plants of carbohydrates and oxygen from carbon dioxide mediated by chlorophyll in the presence of sunlight.

phytoplankton: That portion of the plankton community composed of tiny plants (e.g., algae, diatoms).

$PM_{2.5}$: Fine particles that are less than or equal to 2.5 micrometers in diameter.

PM_{10}: Particles less than or equal to 10 micrometers in diameter.

point source pollution: Effluent or discharges directly from a pipe into a waterway (e.g., from many industries and sewage treatment plants).

pollutant: Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.

pollution: Generally, the presence of a substance in the environment that, because of its chemical composition or quantity, prevents the functioning of natural processes and produces undesirable environmental and health effects. Under the Clean Water Act, for example, the term has been defined as the manmade or man-induced alteration of the physical, biological, chemical, and radiological integrity of water and other media.

polychlorinated biphenyls (PCBs): A group of synthetic chemicals that can exist as oily liquids and waxy solids. They have been commercially used in electrical transformers and capacitors, hydraulic equipment, paint elasticizers, plastics, rubber products, pigments, dyes, and carbonless copy paper. PCBs can produce toxic effects and are probable carcinogens.

pressure: See *stressor.*

prevalence of disease: That part of the total population affected by a condition or disease.

production capacity: Chlorophyll per unit area for terrestrial ecosystems (including wetlands and riparian areas) and per unit volume for aquatic ecosystems.

productivity: The rate at which ecosystems use energy (principally solar energy) to fix atmospheric carbon dioxide.

R

radioactive waste: Garbage, refuse, sludge, and other discarded material, including solid, liquid, semisolid, or contained gaseous material that must be managed for its radioactive content. Types of radioactive waste include high-level waste, spent nuclear fuel, transuranic waste, low-level waste, mixed lowlevel waste, and contaminated media.

radon (Rn-222): A naturally occurring radioactive gas that has no color, odor, or taste and is chemically inert. Radon comes from the radioactive decay of uranium in soil, rock, and ground water and is found all over the U.S. It has a half-life of 3.8 days, emitting ionizing radiation (alpha particles) during its radioactive decay to several radioactive isotopes known as "radon decay products." It gets into indoor air primarily from soil under homes and other buildings. Radon is a known human lung carcinogen and represents the largest fraction of the public's exposure to natural radiation.

rangelands: A National Resources Inventory land cover/use category on which the climax or potential plant cover is composed principally of native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing, and introduced forage species that are managed like rangeland. This would include areas where introduced hardy and persistent grasses, such as crested wheatgrass, are planted and such practices as deferred grazing, burning, chaining, and rotational grazing are used, with little or no chemicals or fertilizer being applied. Grasslands, savannas, many wetlands, some deserts, and tundra are considered to be rangeland. Certain communities of low forbs and shrubs, such as mesquite, chaparral, mountain shrub, and pinyon-juniper, are also included as rangeland.

rare and at-risk species: Rare species are those that are particularly vulnerable to both human-induced threats and natural fluctuations and hazards. At-risk species are those classified by the Association for Biodiversity Information as vulnerable or more rare.

RCRA hazardous waste: Applies to certain types of hazardous wastes that appear on EPA's regulatory listing (RCRA) or that exhibit specific characteristics of ignitability, corrosiveness, reactivity, or excessive toxicity.

remediation: Cleanup or other methods used to remove or contain a toxic spill or hazardous materials from a contaminated site.

risk: The probability that a health problem, injury, or disease will occur.

risk factor: A characteristic (e.g., race, sex, age, obesity) or variable (e.g., smoking, occupational exposure level) associated with increased probability of an adverse effect.

runoff: That part of precipitation, snowmelt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into receiving waters.

rural transportation land: A National Resources Inventory land cover/use category that consists of all highways, roads, railroads, and associated right-of-ways outside urban and built-up areas; including private roads to farmsteads or ranch headquarters, logging roads, and other private roads, except field lanes.

S

secondhand smoke: See *environmental tobacco smoke*.

sedimentation: The process of forming or depositing sediment; letting solids settle out of wastewater by gravity during treatment.

sludge: Solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater facility.

small built-up areas: A National Resources Inventory land cover/use category consisting of developed land units of 0.25 to 10 acres, which meet the definition of urban and built-up areas.

solid waste: Nonliquid, nonsoluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, mining residues, and liquids and gases in containers.

species richness: The absolute number of species in an assemblage or community.

spent nuclear fuel: Nuclear reactor fuel that has been used to the extent that it can no longer effectively sustain a chain reaction.

spray drift: The physical movement of a pesticide through air at the time of application, or soon thereafter, to any site other than that intended for application.

stationary source: A place or object from which pollutants are released and that stays in one place. These sources include many types of facilities, including power plants, gas stations, dry cleaners, incinerators, factories, and houses.

stressor: A physical, chemical, or biological entity that can induce adverse effects on ecosystems or human health.

submerged aquatic vegetation (SAV): Rooted vegetation that grows under water in shallow zones where light penetrates.

Superfund: The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) that funds and carries out EPA solid waste emergency and long-term removal and remedial activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority, and conducting and/or supervising cleanup and other remedial actions.

Superfund site: Any land in the U.S. that has been contaminated by hazardous waste and identified by EPA as a candidate for cleanup because it poses a risk to human health, the environment, or both.

surface water: Water in rivers, streams, lakes, ponds, reservoirs, estuaries, and wetlands (found at the surface, in contrast to ground water).

T

threatened and endangered species: Those species that are in danger of extinction throughout all or a significant portion of their range or are likely to become endangered in the future.

threshold: 1.The lowest dose of a chemical at which a specified measurable effect is observed and below which it is not observed. 2.The dose or exposure level below which a significant adverse effect is not expected.

timber land: Forest land that is capable of producing crops of industrial wood (at least 20 cubic feet per acre per year in natural stands) and not withdrawn from timber use by statute or administrative regulation.

Toxics Release Inventory (TRI): A publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industries and federal facilities. TRI was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

toxic substance: Any substance that presents a significant risk of injury to health or the environment through exposure.

toxic waste: A waste that can produce injury if inhaled, swallowed, or absorbed through the skin.

troposphere: The layer of the atmosphere closest to the earth's surface.

U

ultraviolet (UV) radiation: Radiation from the sun that can be useful or potentially harmful. UV radiation from one part of the spectrum (UV-A) enhance plant life. UV radiation from other parts of the spectrum (UV-B) can cause skin cancer or other tissue damage. The ozone layer in the atmosphere partly shields the earth from UV radiation reaching the surface.

underground storage tanks: Tanks and their underground piping that have at least 10 percent of their combined volume underground.

urban and built-up areas: A National Resources Inventory land cover/use category consisting of residential, industrial, commercial, and institutional land construction sites; public administrative sites; railroad yards; cemeteries; airports; golf courses; sanitary structures and spillways; small parks (less than 10 acres) within urban and built-up areas; and highways, railroads, and other transportation facilities if they are surrounded by urban areas. Also included are tracts of less than 10 acres that do not meet the above definition but are completely surrounded by urban and builtup land.

urban and suburban areas: Places where the land is primarily devoted to buildings, houses, roads, concrete, grassy lawns, and other elements of human use and construction. Urban and suburban areas, in which about three-fourths of all Americans live, span a range of density, from the city center characterized by high-rise buildings and little green space to the suburban fringe where development thins to a rural landscape. This definition does not include all developed lands, for example, small residential zones, the area of rural interstate highways, farmsteads, and the like, which are developed but are not sufficiently built-up to be considered urban or suburban.

urbanization: The concentration of development in relatively small areas (cities and suburbs). The U.S. Census Bureau

defines "urban" as areas with densities of people greater than 1.5 people per acre.

V-Z

vehicle miles traveled: A measure of the extent of motor vehicle operation; the total number of vehicle miles traveled by all vehicles within a specific geographic area over a given period of time. Vehicle miles traveled and other variables are used to estimate air pollutant emissions.

volatile organic compounds: Chemicals, such as gasoline and perchloroethylene (a dry cleaning solvent) that contain carbon and vaporize readily.

waste minimization priority chemicals: A group of 30 chemicals—3 metals (lead, mercury, and cadmium) and 27 organic chemicals—identified as the highest priority for reduction in industrial and hazardous waste.

water clarity: A measure of how clear a body of water is; measured in the distance light penetrates into the water.

water quality criteria: Levels of water quality expected to render a body of water suitable for its designated use. Criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, irrigation, fish production, or industrial processes.

water quality standards: State-adopted and EPA-approved ambient standards for water bodies. The standards define the water quality goals of a water body by designating the uses of the water and setting criteria to protect those uses. The standards protect public health and welfare, enhance the quality of the water, and provide the baseline for surface water protection under the Clean Water Act.

waterborne disease outbreak: The significant occurrence of acute illness associated with drinking water from a public water system or exposure encountered in recreational or occupational settings as determined by appropriate local or state agencies. (The Centers for Disease Control and Prevention defines an outbreak as two or more cases associated with drinking water as the route of exposure.)

watershed: An area of land from which all water that drains from it flows to a single water body.

wetland ecosystems: Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.